



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,032	09/02/2003	Nozomu Nishinaga	4035-0160P	1533

2292 7590 05/17/2006

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER

RIVERO, ALEJANDRO

ART UNIT	PAPER NUMBER
----------	--------------

2618

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/652,032	<b>Applicant(s)</b> NISHINAGA ET AL.	
	<b>Examiner</b> Alejandro Rivero	<b>Art Unit</b> 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: COMMUNICATION SATELLITE FACILITY AND SATELLITE COMMUNICATION SYSTEM PROVIDING BIDIRECTIONAL WIDEBAND INTERSATELLITE COMMUNICATION.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract is objected to because it contains the phrase "according to the invention" (in lines 5-6), which can be implied.

3. The disclosure is objected to because of the following informalities:

In line 20 of page 1, replace "satellite" with "satellites".

In line 7 of page 4, replace “modulating demodulating” with “modulating/demodulating”.

In line 4 of page 6, replace “modulating demodulating” with “modulating/demodulating”.

In line 27 of page 1, replace “branded/demodulated” with “branched/demodulated”.

In line 20 of page 11, replace “(Gate SW) (300)” with “(Gate SW) (306)”.

Appropriate correction is required.

#### ***Claim Objections***

4. Claims 1-4, 9 and 11-16 are objected to because of the following informalities:

In claim 1 (line 1), the examiner respectfully suggests replacing “Communication satellite facility” with “A communication satellite facility”.

In claim 1 (line 12), the examiner respectfully suggests replacing “the transmitted/received said radio-frequency signals” with “the transmitted/received radio-frequency signals” or “said transmitted/received radio-frequency signals”.

In claim 2 (line 2), the examiner respectfully suggests adding “a” before “circuit”.

In claim 3 (line 2), the examiner respectfully suggests replacing “aid” with “said”.

In claim 3 (line 5), examiner respectfully suggests replacing “modulating demodulating” with “modulating/demodulating”.

In claim 4 (line 2), the examiner respectfully suggests replacing “aid” with “said”.

In claim 4 (line 5), examiner respectfully suggests replacing “modulating demodulating” with “modulating/demodulating”.

In claim 9 (line 1), the examiner respectfully suggests replacing "Satellite communication system" with "A satellite communication system".

In claim 9 (line 12), the examiner respectfully suggests replacing "the transmitted/received said radio-frequency signals" with "the transmitted/received radio-frequency signals" or "said transmitted/received radio-frequency signals".

In claim 9 (line 26), the examiner respectfully suggests replacing "transmission/receiving" with "transmitting/receiving".

In claim 11 (line 2), the examiner respectfully suggests adding "a" before "circuit".

In claim 12 (lines 2-3), the examiner respectfully suggests adding "a" before "circuit".

In claim 13 (line 2), the examiner respectfully suggests replacing "aid" with "said".

In claim 13 (line 5), examiner respectfully suggests replacing "modulating demodulating" with "modulating/demodulating".

In claim 14 (line 2), the examiner respectfully suggests replacing "aid" with "said".

In claim 14 (line 5), examiner respectfully suggests replacing "modulating demodulating" with "modulating/demodulating".

In claim 15 (line 2), the examiner respectfully suggests replacing "aid" with "said".

In claim 15 (line 5), examiner respectfully suggests replacing "modulating demodulating" with "modulating/demodulating".

In claim 16 (line 2), the examiner respectfully suggests replacing "aid" with "said".

In claim 16 (line 5), examiner respectfully suggests replacing "modulating demodulating" with "modulating/demodulating".

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saunders (JP 2001-285169, cited by applicant in IDS) in view of Lynch (US 6,002,916).

Consider claim 1, Saunders discloses a communication satellite facility comprising a first satellite at least having a receiving antenna adapted to receive radio-frequency signals transmitted from a ground station (Abstract, page 21 lines 2-6), down-converter means adapted to convert the radio-frequency signals received by said receiving antenna to intermediate frequency signals (Page 22 lines 18-23), a transmitting antenna adapted to transmit radio-frequency signals to the ground station (Page 23 lines 24-26), up-converter means adapted to the intermediate frequency signals to be transmitted again to the radio-frequency signals (Page 3 lines 19-24),

Art Unit: 2618

switching means adapted for switching/routing the transmitted/received said radio-frequency signals (Page 24 lines 1-4) and intersatellite communication means adapted for bidirectional intersatellite communication between said first satellite and a second satellite (Abstract, page 21 lines 9-13); and said second satellite at least having intersatellite communication means adapted for bidirectional intersatellite communication between said second satellite and said first satellite (Abstract, page 21 lines 9-13) and modulating/demodulating means adapted to modulate/demodulate the signals transmitted and received by said intersatellite communication means (Page 27 lines 9-13).

However, Saunders does not specify wideband.

Lynch specifies wideband (Column 2 lines 26-34, column 6 lines 32-40).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to support wideband as taught by Lynch in the system of Saunders for the purpose of supporting military and government survivability and vulnerability goals (as suggested by Lynch in column 3 line 66-column 4 line 7).

Consider claim 9, Saunders discloses a satellite communication system comprising a first satellite at least having a receiving antenna adapted to receive radio-frequency signals transmitted from a ground station (Abstract, page 21 lines 2-6), down-converter means adapted to convert the radio-frequency signals received by said receiving antenna to intermediate frequency signals (Page 22 lines 18-23), a transmitting antenna adapted to transmit radio-frequency signals to the ground station (Page 23 lines 24-26), up-converter means adapted to the intermediate frequency

Art Unit: 2618

signals to be transmitted again to the radio-frequency signals (Page 3 lines 19-24), switching means adapted for switching/routing the transmitted/received said radio-frequency signals (Page 24 lines 1-4) and intersatellite communication means adapted for bidirectional intersatellite communication between said first satellite and a second satellite (Abstract, page 21 lines 9-13); said second satellite at least having intersatellite communication means adapted for bidirectional intersatellite communication between said second satellite and said first satellite (Abstract, page 21 lines 9-13) and modulating/demodulating means adapted to modulate/demodulate the signals transmitted and received by said intersatellite communication means (Page 27 lines 9-13); and said ground station at least having an antenna adapted for transmitting or receiving radio-frequency signals between said ground station and said first satellite (Abstract, page 21 lines 18-20), ground station signal processor means adapted to process the transmitted/received signals at least inclusive of modulation or demodulation in accordance with a given communication method (Abstract, page 21 lines 18-20, page 27 lines 9-13, where Saunders discloses transmitting and receiving RF signals at a ground station) and interface means to a ground network (Abstract, page 21 lines 18-20, figure 1 elements 30 and 90, where Saunders discloses two ground stations (reads on ground network) communicating over satellites (reads on interface means)).

However, Saunders does not specify wideband.

Lynch specifies wideband (Column 2 lines 26-34, column 6 lines 32-40).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to support wideband as taught by Lynch in the system of Saunders for the purpose of supporting military and government survivability and vulnerability goals (as suggested by Lynch in column 3 line 66-column 4 line 7).

Consider claims 2, 11 and 12, Saunders as modified by Lynch disclose all the limitations as applied to claims 1, 9 and 10 (see below) and also disclose wherein said second satellite is provided with circuit switching unit f or a data link (i/o to processor) layer and a network (i/o to other terminal) layer (Page 24 lines 1-14 of Saunders).

Consider claims 3-4, 13-16 and 26, Saunders as modified by Lynch discloses all the limitations as applied to claims 2, 9, 10 (see below), 11 and 12 and also disclose wherein the modulating/demodulating means of said second satellite comprises a software modem adapted to determine and to execute at least modulating or demodulating method and/or error correcting methods in accordance with a program (Page 27 lines 9-13 of Saunders).

Consider claims 5-8 and 17-24, Saunders as modified by Lynch disclose all the limitations as applied to claims 1, 2, 3, 4, 9, 10 (see below), 11, 12, 13, 14, 15 and 16 and also disclose wherein said second satellite is provided with wideband intersatellite communication means adapted for bidirectional wideband intersatellite communication between said second satellite and a third satellite (Abstract, column 2 lines 1-45 of Lynch); and said third satellite is provided with wideband intersatellite communication means adapted for bidirectional wideband intersatellite communication between said third satellite and said second satellite (Abstract, column 2 lines 1-45 of Lynch) and

Art Unit: 2618

digital signal processor means adapted to process and store at least a part of the signals used for said bidirectional wideband intersatellite communication (Column 7 line 62-column 8 line 8 of Lynch).

Consider claims 10 and 25, Saunders as modified by Lynch disclose all the limitations as applied to claims 1 and 17 and also disclose wherein said first satellite and said second satellite are deployed on geosynchronous orbit and radially spaced from each other within one and same orbit slot by a distance of approximately 1 km - 10 km (Page 25 line 26-page 26 line 1 of Saunders).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Wiedeman et al. (US 6,985,454, B12) disclose an IPS system using non-synchronous orbit satellites.

Wilson (US 6,160,993) discloses a method and apparatus for command and control of remote systems using low earth orbit satellite communications.

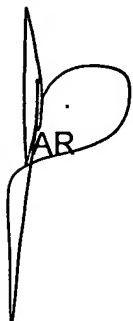

Stuart et al. (US 5,678,175) disclose a satellite system using equatorial and polar orbit relays.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alejandro Rivero whose telephone number is (571) 272-2839. The examiner can normally be reached on 8:30AM-5:00PM.

Art Unit: 2618

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be a stylized 'P' or 'R' with a dot above it. The letters 'AR' are printed in a small font directly beneath the signature.A handwritten signature in black ink, appearing to be 'Nick Corsaro'.

NICK CORSARO  
PRIMARY EXAMINER